

A LIGHT SOURCE MODULE FOR A SCANNING APPARATUS AND A SCANNING
APPARATUS WITH THE LIGHT SOURCE MODULE

This application is a divisional of application number
09/084,954, filed May 28, 1998, now ~~allowed~~ **U.S. PATENT 6,283,373.**

BACKGROUND OF THE INVENTION

1. Field of the Invention

The invention relates to a light source module for a scanning apparatus such as a bar code reader, and to a scanning apparatus with the light source module.

2. Description of the Related Art

Recently, point-of-sale systems (POS systems) have become common in stores. In a POS system, a bar code reader reads a bar code provided on an article. According to the POS system, check-out work is carried out only by scanning a beam emitted from a bar code reader. Thus, the work of an operator (salesclerk) is reduced by using a bar code reader.

A bar code reader generally includes a light source for emitting a beam, an arrangement for generating a scanning beam by reflecting the beam from the light source, such as a rotating polygon mirror, a plurality of mirrors for reflecting the scanning beam and for dividing the scanning beam to provide a set of scanning lines outside of the bar code reader. The return beams reflected by a bar code on an article are condensed by a concave mirror or a condenser lens onto a light receiving device, such as a photodiode which generates an electrical signal corresponding to the return beams received by the light receiving device. These elements are sealingly contained within a housing to provide an optical unit.

Such an apparatus for reading a bar code is a kind of a scanner apparatus, similar to a scanner device in a laser printer or a copy machine, and is often referred to as a POS scanner or a bar code scanner. A laser diode is often used as a light source because of its compactness, low power consumption, and cost while a gas laser beam (for example, He-Ne laser beam) was originally used.